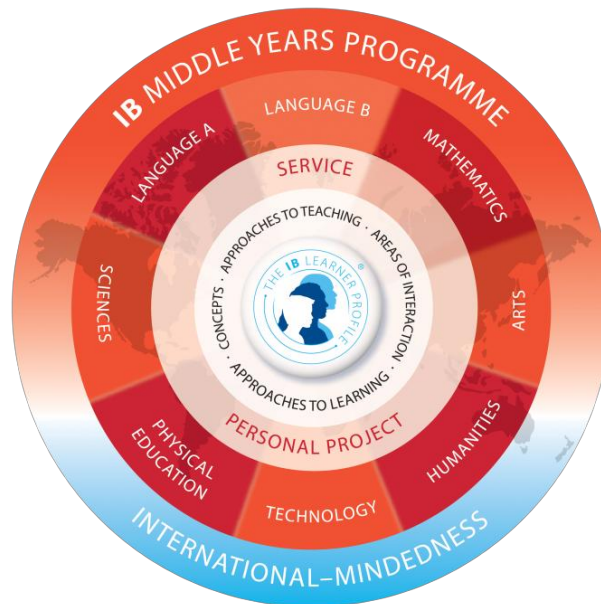


The Middle Years Programme (MYP)

For many years, the programme model for the MYP has contained a single circle for the five areas of interaction. The former model placed the five areas of interaction closest to the centre; the areas of interaction served as contexts for learning that could better enable interdisciplinary learning. The new model contains the same message about an MYP education but with a different presentation. The circle closest to the centre of the model now contains four elements.



- **Approaches to learning**—this demonstrates the commitment to approaches to learning as a key component of the MYP for developing skills for learning.
- **Approaches to teaching**—this emphasizes the MYP pedagogy, including collaborative, authentic learning through inquiry.
- **Concepts**—this shows the emphasis placed on a concept-based curriculum.
- **Areas of interaction**—shows how learning best takes place in context, and can help to develop international-mindedness.

An extra circle highlights other key components of the model. Inquiry-based learning may result in action which may in turn be demonstrated by students in the form of service in the community. The MYP culminates in the personal project, and this features on the model now. This circle demonstrates the clear alignment with action and service, and with the culminating activities in the PYP and the DP.

There are still eight subject groups, presented without distinct lines between them to indicate the interdisciplinary nature of the MYP.

IBO Mission Statement Reflection

IBO Mission Statement	How are we doing this now?	How can we do it better?
...aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world...		
...works with schools, governments and international organizations to develop challenging programmes and rigorous assessment.		
...encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.		

Questions to consider:

What are the key words or phrases that could potentially be a challenge to my school?

How might these be overcome?

What is the good news about this mission and the already existing mission at my school?

The MYP fundamental concepts

Holistic Learning - emphasizes the links between the disciplines, providing a global view of situations and issues. Students should become more aware of the relevance of their learning, and come to see knowledge as an interrelated whole. Students should see the cohesion and the complementarity of various fields of study, but this must not be done to the detriment of learning within each of the disciplines, which retain their own objectives and methodology.

What does this mean?

- Learning across the subject areas in your school is interrelated (cross-curricular links.)
- Learning takes on a greater meaning than simply the passing on of information. It becomes relevant to the student.
- Students become more aware of the impact of issues, actions and experience on a global level.

Intercultural Awareness - is concerned with developing the students' attitudes, knowledge and skills as they learn about their own and others' social and national cultures. By encouraging students to consider multi perspectives, intercultural awareness not only fosters tolerance and respect, but may also lead to empathy.

What does this mean?

- Students will learn about different cultures within their own country and in countries around the world.
- Students will learn to appreciate the value of the similarities and differences between societies and cultures around the world.
- Students through this scope of learning will hopefully develop a long lasting tolerance, respect and empathy toward their fellow humans.

Communication - is fundamental to learning, as it supports inquiry and understanding, and allows student reflection and expression. The MYP places particular emphasis on language acquisition and allows students to explore multiple forms of expression.

What does this mean?

- Students will be encouraged to develop communication skills in all areas of learning.
- Students will learn the value of self expression and learn to appreciate the importance of listening to others.
- Students will learn to reflect on all aspects of their learning through the different mechanisms of communication.

Frequently asked questions

1. *Why are the fundamental concepts not on the programme model?*

The fundamental concepts do not appear on the programme model, as they are the basis for the whole programme. Workshop leaders can access a wide array of alternative models or metaphors that do include the fundamental concepts, for example, a house. The bricks can be seen as the programme itself, the windows the area of interaction, and foundations of the house the fundamental concepts.

2. *Is it possible to consider intercultural awareness as “the 6th area of interaction”?*

No, many (implementing) schools are tempted to have intercultural awareness as the “6th area of interaction”. Often there are very superficial links made to “internationalism”, without meaningful reflection from within the school. Intercultural awareness goes beyond the areas of interaction as it should permeate the school all the time, rather than being an occasional “lens” for instruction. Intercultural awareness needs to affect all aspects of school life, from staff recruitment and choice of library books to teaching students mediation and conflict resolution skills.

3. *What is the link between the fundamental concepts and the areas of interaction?*

Teaching through the areas of interaction should help to promote the fundamental concepts. Both the fundamental concepts and the areas of interaction are unique characteristics of the programme and although they ultimately serve a common purpose they have different but interconnected roles.

While the fundamental concepts are essential components that underpin the whole philosophy of the programme, they also act as guiding principles for curriculum design and teaching planning. The areas of interaction on the other hand will provide the means for developing connections across the subject groups, fostering interdisciplinary teaching and allowing a variety of approaches for teaching and learning. The fundamental concepts will provide the rationale and the areas of interaction the active instruments for action.

Through the contexts for learning provided by the MYP’s **areas of interaction**, students can come to realize that most real-world problems require insights gained from a variety of disciplines. Students develop skills of inquiry and come to understand the similarities and differences between different approaches to human knowledge. The framework allows students to apply disciplinary knowledge to different contexts. The areas of interaction serve to emphasize the relationships between the subject groups and provide a global view of situations and issues.

Teaching through the areas of interaction should help to promote the fundamental concepts. For example, schools can organize activities that reflect global issues related to the areas of interaction, such as a model United Nations or fundraising for an international NGO. The fundamental concepts can also provide a global perspective on issues connected to the areas of interaction.

4. Does holistic learning mean teaching interdisciplinary topics?

No, holistic learning means helping students understand interrelations between knowledge and subjects. This can be done through separate subject teaching provided teachers are aware of what their colleagues are teaching and help students make connections.

Whereas traditional curriculum frameworks have usually described the curriculum in terms of a body of knowledge only, the MYP views the curriculum as meeting the needs of the whole person. This other aspect of holistic learning is exemplified in the provision of objectives not just for knowledge alone. The MYP places great emphasis on:

- the understanding of concepts
- the mastery of skills
- the development of attitudes that can lead to considered and appropriate action.

Through acknowledging and attempting to meet the diverse needs of the student—physical, social, intellectual, aesthetic and cultural—schools ensure that learning in the MYP is significant, provocative, relevant, engaging and challenging.

5. Should students be aware of the fundamental concepts?

Yes, the IB is completely open about the structure of its programmes with students. Learning about the goals of the curriculum they participate in is part of the learning process.

6. Do we assess the fundamental concepts?

No, awareness of the fundamental concepts should be manifest in work students produce in the subject areas and in the personal project.

7. Can you do a unit of work or exam on the fundamental concepts?

Although it is possible to use the fundamental concepts as a theme or topic, teachers must remember that those concepts are primarily the basis of the whole programme, and should permeate all areas of the curriculum anyway.

8. Should we base our MYP curriculum around the themes of the author JA Beane?

No, the IB does not prescribe themes or topics. It is up to the schools and teachers to decide. On the other hand, Beane does give good examples of broad concepts and the IB uses his work as an example of good practice. The work from Lyn Erikson also provides interesting stimulus with regards to conceptual work.

The IB learner profile

IB learner profile	
The aim of all IB programmes is to develop internationally minded people who, recognizing our common humanity and shared guardianship of the planet, help to create a better and more peaceful world. IB learners strive to be:	
Inquirers	They develop their natural curiosity. They acquire the skills necessary to conduct inquiry and research and show independence in learning. They actively enjoy learning and this love of learning will be sustained throughout their lives.
Knowledgeable	They explore concepts, ideas and issues that have local and global significance. In so doing, they acquire in-depth knowledge and develop understanding across a broad and balanced range of disciplines.
Thinkers	They exercise initiative in applying thinking skills critically and creatively to recognize and approach complex problems, and make reasoned, ethical decisions.
Communicators	They understand and express ideas and information confidently and creatively in more than one language and in a variety of modes of communication. They work effectively and willingly in collaboration with others.
Principled	They act with integrity and honesty, with a strong sense of fairness, justice and respect for the dignity of the individual, groups and communities. They take responsibility for their own actions and the consequences that accompany them.
Open-minded	They understand and appreciate their own cultures and personal histories, and are open to the perspectives, values and traditions of other individuals and communities. They are accustomed to seeking and evaluating a range of points of view, and are willing to grow from the experience.
Caring	They show empathy, compassion and respect towards the needs and feelings of others. They have a personal commitment to service, and act to make a positive difference to the lives of others and to the environment.
Risk-takers	They approach unfamiliar situations and uncertainty with courage and forethought, and have the independence of spirit to explore new roles, ideas and strategies. They are brave and articulate in defending their beliefs.
Balanced	They understand the importance of intellectual, physical and emotional balance to achieve personal well-being for themselves and others.
Reflective	They give thoughtful consideration to their own learning and experience. They are able to assess and understand their strengths and limitations in order to support their learning and personal development.

The learner profile directs schools to focus on the development of the whole person. Developing an international perspective is a critical element of, and is central to, the programme; it must begin with encouraging each student to consider the point of view of someone else in the same class. By sharing experiences in the classroom setting and beyond, students can develop their awareness of, and sensitivity to, the experiences of others beyond the local or national community.

Are You an IB Learner?

IB Learners are:



Inquirers

- ☒ Are you curious?
- ☒ Do you know how to find answers to your questions?



Knowledgeable

- ☒ Do you know about a range of subjects and topics?



Thinkers

- ☒ Do you apply what you learn to new situations?
- ☒ Can you use your knowledge to solve problems and make good decisions?

Communicators

- ☒ Can you communicate your ideas clearly and in writing?
- ☒ Can you communicate in more than one language?
- ☒ Can you communicate using technology, art, music, and drama?



Principled

- ☒ Are you honest and fair to others?
- ☒ Do you respect the dignity of others?
- ☒ Do you take responsibility for your own actions and any consequences?



Open minded

- ☒ Do you appreciate your own culture?
- ☒ Are you open to other perspectives?

Caring

- ☒ Do you show compassion and empathy for the needs and feelings of others?
- ☒ Do you act to make a positive difference for others and for the environment?



Risk-Takers

- ☒ Do you approach unfamiliar situations with confidence?
- ☒ Do you share and defend your beliefs, even if you're not part of the majority?



Balanced

- ☒ Do you balance your intellectual, physical, and emotional needs?



Reflective

- ☒ Do you know your strengths and limitations?
- ☒ Do you look for ways to improve?



What type of IB learner am I?

For each of the specific IB learner profile traits, rate yourself using the following scale:

4 very much so 3 somewhat 2 very little 1 not at all

Inquirer

- I am curious. _____
- I know how to find answers to questions. _____
- I enjoy learning about new things. _____

Knowledgeable

- I know about a range of ideas and issues that have local significance. _____
- I explore ideas and issues that have a global impact. _____
- I understand the subjects I study in school are connected to the world we live in. _____

Thinker

- I apply what I learn to new situations. _____
- I use my knowledge to solve complex problems. _____
- I think carefully before making decisions. _____

Communicator

- I am comfortable and confident talking and writing about my ideas and I am able to do this in more than one language. _____
- I am creative and able to express my ideas in many ways using different forms of art and technology. _____
- I listen to others and express my ideas clearly in a group. _____

Principled

- I have strong values. I am honest and fair. _____
- I treat others with respect. _____
- I take responsibilities for my actions and any consequences. _____

Open-minded

- I understand, participate in and value my culture and history. _____
- I appreciate and try to understand the values and traditions of other cultures. _____
- I take other points of view into consideration before making up my mind. _____

Caring

- I show compassion and respect towards the needs and feelings of others. _____
- My daily actions make a positive difference for others and the environment. _____
- I enjoy doing community and service. _____

Risk-taker

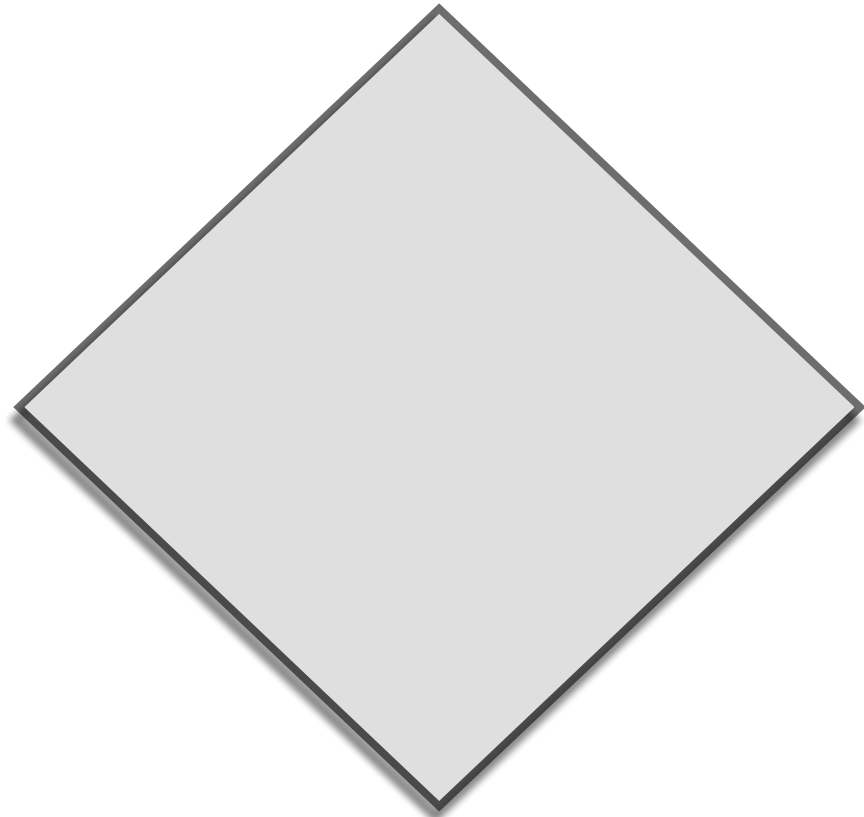
- I approach unfamiliar situations with confidence. _____
- I share and defend my beliefs. _____
- I participate in many activities, seek new challenges and explore different ideas on a regular bases. _____

Balanced

Year ____

Date: _____

Instructions: Add up the totals for each characteristic and rank them by writing and placing each in the diamond. Strengths should be placed at the top, while characteristics that need work should be placed at the bottom.



The IB learner profile is a map of a lifelong journey in pursuit of international-mindedness and intellectual, personal, emotional and social growth. What are your strengths and how will you improve your weaknesses?

NASA Exercise: Survival on the Moon

Scenario:

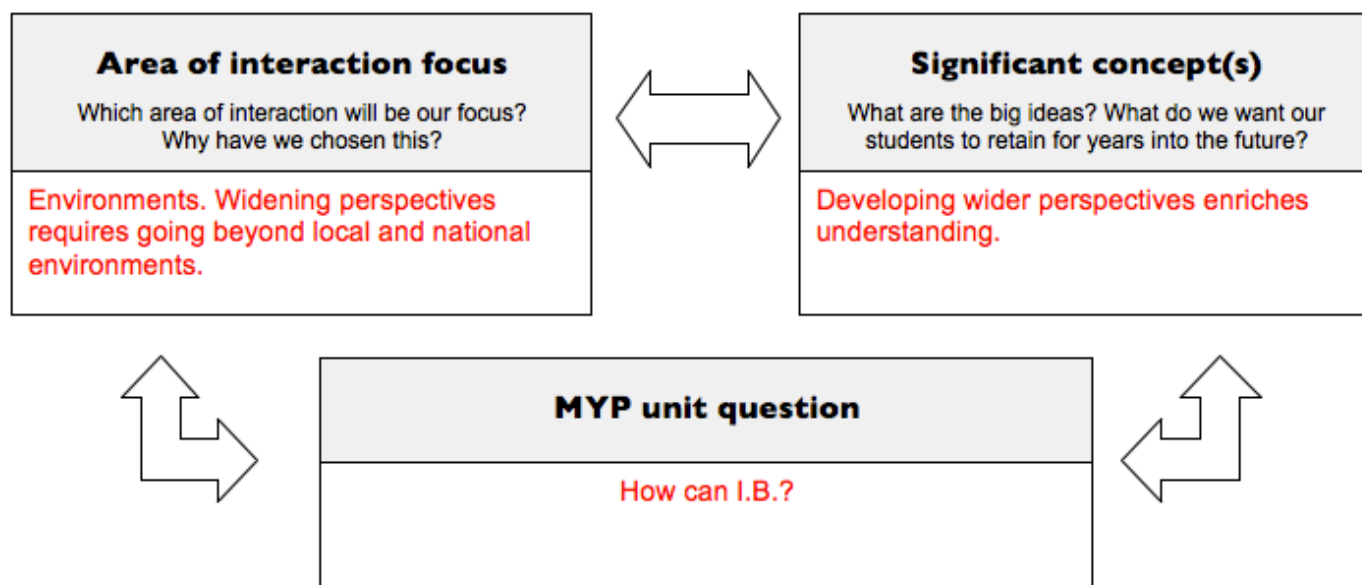
You are a member of a space crew originally scheduled to rendezvous with a mother ship on the lighted surface of the moon. However, due to mechanical difficulties, your ship was forced to land at a spot some 200 miles from the rendezvous point. During reentry and landing, much of the equipment aboard was damaged and, since survival depends on reaching the mother ship, the most critical items available must be chosen for the 200-mile trip. Below are listed the 15 items left intact and undamaged after landing. Your task is to rank order them in terms of their importance for your crew in allowing them to reach the rendezvous point. Place the number **1** by the most important item, the number **2** by the second most important, and so on through number **15** for the least important.

Your Ranking

NASA Ranking

- | | | |
|-------|---|-------|
| _____ | Box of matches | _____ |
| _____ | Food concentrate | _____ |
| _____ | 50 feet of nylon rope | _____ |
| _____ | Parachute silk | _____ |
| _____ | Portable heating unit | _____ |
| _____ | Two .45 caliber pistols | _____ |
| _____ | One case of dehydrated milk | _____ |
| _____ | Two 100 lb. tanks of oxygen | _____ |
| _____ | Stellar map | _____ |
| _____ | Self-inflating life raft | _____ |
| _____ | Magnetic compass | _____ |
| _____ | 20 liters of water | _____ |
| _____ | Signal flares | _____ |
| _____ | First aid kit, including injection needle | _____ |
| _____ | Solar-powered FM receiver-transmitter | _____ |

Answers and scoring sheet are at the back of the workbook.



How International and Intercultural Is YOUR Class?

Use the chart below to critique the atmosphere of your classroom. Keep in mind that the areas of emphasis may or may not be within your direct control as the classroom teacher.

EMPHASIS	SCORE: Superb, Good, Satisfactory or Needs Improvement	EXAMPLE
Culture		Is there a focus on discovering a cultural heritage increasingly influenced and transformed by a globalized world?
Climate		Do you encourage students to consider multiple perspectives in order to foster tolerance and respect, to develop empathy and understanding, and to promote acceptance of others' rights in being different?
Student Body		Are your classes heterogeneous, with students from many nationalities and with diverse cultural heritages?
Curriculum		Does your content area allow for connections to real-world issues and varied manifestations of cultures? How well do you promote these issues?
Resources		Do you and your students have access to resources in the school and community that allow further exploration of global issues, cultural development, tolerance etc?
Commitment to Reflection		Are your students given opportunities to consider the impact that multiculturalism has on their lives, their school, their community, their nation and the world?
Commitment to Extension		Are your students encouraged to look beyond the classroom as they develop an international and intercultural awareness? Do you promote involvement in activities and services that provide hands-on experience in these areas?

Promoting Intercultural Awareness

Developing intercultural awareness is an ongoing process which concerns everyone within the school. Listed below are different ways in which many MYP schools reflect on and promote this fundamental principle of the MYP. This list can be used to promote reflection and discussion among school staff as the school implements and develops the programme.

Summary of ideas shared by some MYP schools

School Philosophy and Culture

MYP schools suggest a number of ways of making intercultural awareness part of the school culture and climate.

- Develop a school's mission statement which clearly communicates a philosophy of intercultural understanding.
- Look for international experience and multicultural diversity when recruiting staff.
- Include reflection on intercultural awareness when organizing staff meetings, professional development activities and teacher appraisal.
- Encourage teachers to become familiar with the cultures of the students in the school.
- Empower students through committees, student government, discussion of student rights and responsibilities, involvement in establishing codes of acceptable behaviour.
- Establish clear expectations and discipline procedures requiring individual responsibility based on respect for individuals and the community; encourage self-discipline and self-respect.
- Reflect on and communicate the values inherent in this philosophy; discuss situations and their consequences rather than preaching 'right and wrong'.

Curriculum

Intercultural awareness should also pervade the curriculum.

- Select syllabus content which illustrates multiple perspectives on events.
- Choose activities which require analysis of similarity and difference, in order to develop the understanding that different does not necessarily mean better or worse.
- Use homeroom and special classes to consider the notions of universal values and human rights; discuss radically different sets of values; discuss whether we should tolerate intolerance.
- Consider teachers as more than subject specialists: mentors, advisors, role models.
- Be concerned with developing emotional as well as academic intelligence.
- Use fundamental guiding questions for personal and group inquiry which involve reflection on cultural issues.

- Encourage or require national cliques to mix for class activities; discuss the impact of national groups in the school and encourage more mixing.

Languages

- Require or at least facilitate native language learning for all students.
- Encourage students to speak in different languages around the school.
- Make a number of learned language options available to students.
- Include cultural studies relating to the host country in the curriculum.
- Have students read and discuss world literature in translation.

Other Subjects

- In sciences, explore global and environmental issues where relevant, also considering the national and cultural contexts.
- Discuss different perspectives on historical events, develop empathy, learn to detect bias in historical commentary.
- Study comparative culture and religion; acknowledge and respect religious festivals
- In physical education, develop team skills, learn sports from different countries.
- In arts, investigate artistic traditions from other cultures.
- Produce types of music, art, theatre from different cultures.

Areas of Interaction

When planning the integration of the five areas of interaction, schools should consider their role in promoting intercultural awareness.

- Consider and discuss global issues concerned with health and social education, *homo faber*, environment and community service, through regular class teaching and special events and activities.
- In approaches to learning, consider similarities and differences in teaching and learning styles in different cultures.
- Use community service activities to pay special attention to other nationalities and cultures both inside and outside the school (for example, start a “buddy system” for new students and students who have difficulty with the language of instruction).
- Include discussion of intercultural awareness in areas of interaction leaders’ meetings.
- Teach students mediation and conflict resolution skills.
- Favour activities which develop appropriate attitudes and skills, such as team building exercises, challenge projects.

Organize activities and projects which reflect global issues related to the areas of interaction, such as Model United Nations, Youth Parliament, activities linked to Amnesty International and/or the Peace Curriculum developed by the International Schools Association.

Promoting International Mindedness in Our Schools

The Dalai Lama said, that “more calm, more peace, more compassion, more international feeling is very good for our health.” More peace, compassion and international feeling are also central to the IB mission. In this article I will explore the importance of international mindedness and some implications for teachers and school leaders. Although I am starting from a regional perspective, the very nature of international mindedness makes it imperative to view these ideas as pertinent to schools in the four regions of the IBO.

Most of the IB schools in the IBNA region are not “international” in the traditional sense of the word—they do not cater to an expatriate community with English as the language of instruction in a host country with another native tongue. In our region, most IB schools teach students from the local community. They often have classes with large numbers of immigrants, but are nevertheless local, neighborhood schools. We must derive our claim to being an “international school” from the curriculum itself.

What unites the IBO community of schools is our commitment to an integrated international curriculum. A recent study by Kenneth Tye concluded, “throughout the world, schooling is still seen as a major force in the building of national loyalties.”¹ National, provincial and state curricula have always been designed to instill the values, history and perspectives of a particular society. The IBO offers local schools an international program for the entire school continuum, reaching beyond the local context.

“International mindedness” remains a challenging concept to define and bring alive in our schools. School leaders contribute to the development of the skills, knowledge and attitudes of the teachers in many ways. In IB schools, there is a clear obligation to explore the meaning of internationalism and to give our teachers and school communities powerful reasons to embrace it in their teaching and planning. In each of our schools, it will be important to explore the following questions with all stakeholders (community, parents, teachers, students).

1. Why is it important to foster internationalism in education?
2. What will international mindedness look like in my classroom and in my students?
3. How do we build curriculum around the principles of internationalism as expressed in the IBO mission statement?

1. Why is it important to foster internationalism in education?

As the recent tsunami in Asia demonstrated with a terrible clarity, the interdependence of peoples, communities and nations is becoming ever more palpable. Conflicts in far flung places impact people around the globe in complex and unexpected ways. The environment is struggling to absorb the impact of six billion people on the planet. Martin Gannon once said, “There are as many reasons, and perhaps more reasons, supporting the view that global disintegration may be our fate rather than global integration.”²

To avoid this fate is one of the goals of international education. Children educated for tomorrow’s world must be equipped with the habits of mind that will allow them to act in meaningful ways, whether locally or globally. It is as important to understand the “other’s” point of view as it is to understand one’s own. When we learn to view our world not as “us and them” but as “us and us” we will come closer to finding fair and just solutions to the issues facing humanity. An education that promotes international mindedness will provide young people with

the skills, knowledge and values to confront these challenges and make meaningful contributions to their solutions.

2. What will international mindedness look like in my classroom and in my students?

There are overt as well as subtle ways to promote international mindedness in our students. The foreign language requirement of the program promotes internationalism by valuing the language of another culture. While the flags, international days and trips abroad are a starting point, the goal is to develop a deeper understanding of another culture. What we are striving for is not flag recognition, but the development of intercultural awareness, which will foster a sense of cultural identity in our students. When we introduce our students to inquiries into the cultures, histories and beliefs of others on our planet and look for commonalities, we begin the development of international mindedness. Knell and Wartella observe that, "International education builds respect and ties between nations, advances learning and scholarship, and is a powerful force in replacing myths and misinformation with knowledge and understanding."³

An international curriculum guides our students in developing the knowledge, values and skills necessary to be citizens of the world. Developing interpersonal and communication skills as well as thinking and research skills allows our students to be open-minded and inquiring individuals. Our classrooms must offer rich and varied opportunities to develop these skills.

Young people may not be able to care about global issues without knowledge of the world beyond their local communities. Knowledge will lead to caring, and caring will lead to action. Through action, our students can contribute to the building of a better world, whether it be through a fund raising activity for distant tsunami victims or a clean up in our own backyard. Thoughtful curriculum design will help our students develop an international knowledge base so they can develop the capacity for the action that is integral to the three programs of the IBO.

3. How do we build curriculum around the principles of internationalism as expressed in the IBO mission statement?

Applying the concepts of internationalism to curriculum development can help teachers impart international knowledge and understandings in their classrooms. Whatever level of the IB programs a school offers, an examination of the central concepts of internationalism within the context of the school should become an integral part of curriculum planning. The design of curriculum will come to include the conceptual frames of:

- the role of culture in our lives and the lives of others
- the interdependence of natural and human systems on our planet
- the role of peace education and conflict resolution in our world
- environmental awareness and sustainability
- citizenship and service as an expression of individual responsibility.

As internationalism becomes more meaningful to teachers, they will begin to make important connections to their own disciplines and programs. Ongoing reflection from all participants--administrators, teachers and students--will enrich the internationalism in the curriculum.

For the Primary Years, Middle Years and Diploma Programmes, internationalism has different applications, but not different meanings. Our commitment to international mindedness is the central idea of our program. Internationalism must be integrated into all learning rather than viewed as an add-on subject. It is the task of both individual teachers and whole schools to

make it implicit at all levels of learning. The principles outlined in the *IBO mission statement* illuminate this goal:

The International Baccalaureate Organization aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.⁴

H.G. Wells wrote, "Human history becomes more and more a race between education and catastrophe."⁵ As we consider the ravages of the past century, resulting from both conflict and progress, this statement takes on a renewed urgency. A deep understanding of the interdependence of nations, cultures, peoples and our fragile planet will be a prerequisite for the healing of our natural and political environments. An international education will lead young people to acquire the tools needed for them to understand and create a more secure, sustainable existence on this planet. If we must leave them with a difficult legacy, then we owe it to the next generation to also provide them with the tools they will need to make the necessary changes. The international curriculum we promote through the IB will give them these tools. To paraphrase H.G. Wells, let the race begin!

1 Tye, Kenneth A., "Global Education as a Worldwide Movement," *Phi Delta Kappan*, October 2003.

2 Gannon, Martin J. 2004. *Understanding Global Cultures, Metaphorical Journeys Through 28 Nations, Clusters of Nations, and Continents, 3rd Edition*. Thousand Oaks, CA. Sage.

3 Wartella, E., Knell, Gary E., "Raising a World-Wise Child and the Power of Media," *Phi Delta Kappan*, November 2004.

4 IBO Mission Statement, 2002.

5 Wells, H.G., 1920. *The Outline of History, Being a Plain History of Life and Mankind*

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If the World Were a Village of 100 People

If we could reduce the world's population to a village of precisely 100 people, with all existing human ratios remaining the same, the demographics would look something like this:

The village would have 61 Asians, 13 Africans, 12 Europeans, 9 Latin Americans, and 5 from the USA and Canada

50 would be male, 50 would be female

75 would be non-white; 25 white

67 would be non-Christian; 33 would be Christian

80 would live in substandard housing

16 would be unable to read or write

50 would be malnourished and 1 dying of starvation

33 would be without access to a safe water supply

39 would lack access to improved sanitation

24 would not have any electricity (And of the 76 that do have electricity, most would only use it for light at night.)

8 people would have access to the Internet

1 would have a college education

1 would have HIV

2 would be near birth; 1 near death

5 would control 32% of the entire world's wealth;
all 5 would be US citizens

48 would live on less than US\$ 2 a day

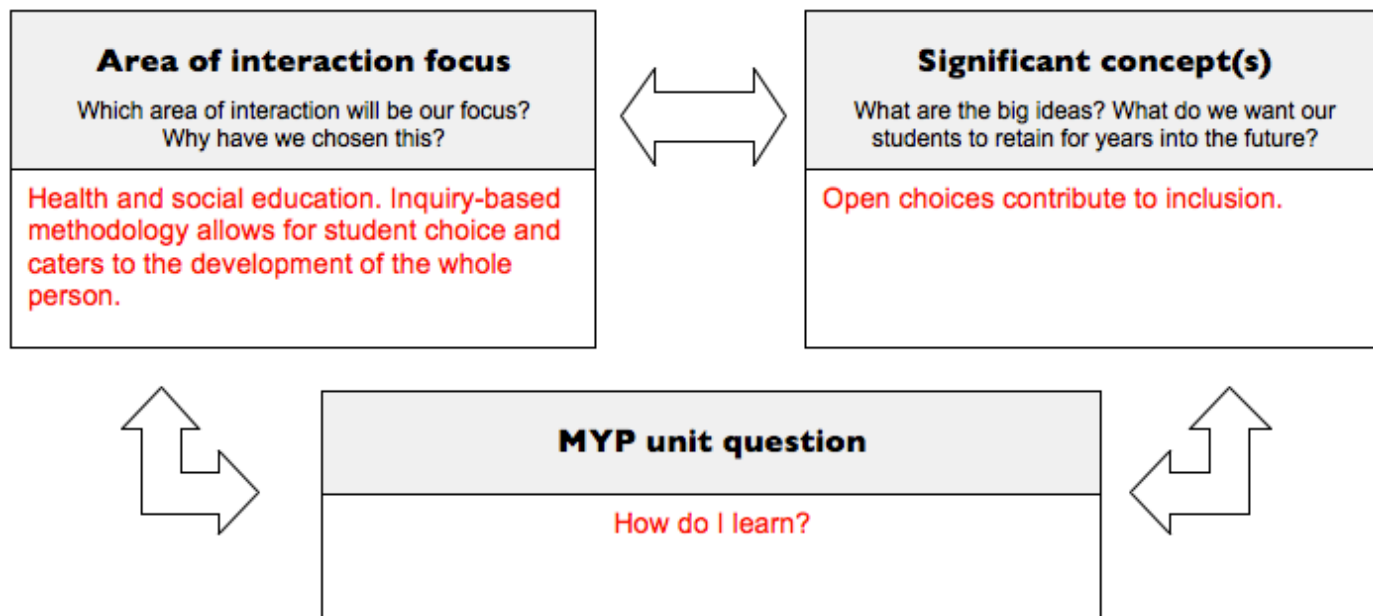
20 would live on less than US\$ 1 a day



Disclaimer: This presentation is for the purpose of fostering understanding of the different cultures of our world. When one considers our world from such a compressed perspective, the need for cooperation, tolerance and understanding becomes glaringly apparent.

As to the accuracy of all statistics: With so many newly published reports resulting in constantly-changing and sometimes conflicting statistics, please view the above presentation for the general content and not meant to be totally precise.

<http://www.familycare.org/special-interest/if-the-world-were-a-village-of-100-people/>



Learning is best supported when set in the context of the exploration of relevant content. MYP students should be invited to investigate significant issues by formulating their own questions, designing their own inquiries, assessing the various means available to support their inquiries and proceeding with research, experimentation, observation and analysis that will help them find their own responses to the issues.

An MYP classroom is a lively and balanced classroom, in the sense that teachers will balance the pursuit of understanding and the construction of meaning with the acquisition of knowledge, skills and attitudes.

To create productive and effective learning environments, teachers need to ask carefully thought-out, open-ended questions and encourage students to ask their own questions. This will require teachers to provide resources and support for each student to become involved in inquiry, using the tools and strategies that best fit the student's development and ways of learning. By striving to provide secure learning environments in which the individual student is valued and respected, teachers can provide students with varied cultural and other perspectives on a range of contemporary and historical issues. An explicit expectation of the MYP is that successful inquiry will lead to meaningful reflection and to responsible action initiated by the students as a result of the learning process.

Teaching in the MYP has	
increased emphasis on:	decreased emphasis on:
using a range and balance of teaching strategies	over-reliance on a limited set of teaching strategies
working collaboratively, grouping and regrouping students for a variety of learning situations	over-reliance on one grouping strategy
viewing students as thinkers with their developing ideas of the world	viewing the teacher as the sole authority
building on what students know (constructivism)	focusing on what students do not know
using multiple resources representing multiple perspectives	over-reliance on one teaching resource from one culture
empowering students to feel responsible and to take action	teaching about responsibility and the need for action by others
involving students actively in their own learning	viewing students as passive recipients
pursuing open-ended inquiry and real-life investigations	a teacher-directed focus on rigid objectives
awareness of the language needs of those learning in a language other than a mother tongue	teaching strategies suitable only for those learning in their mother tongue
addressing the needs of students with different levels and types of ability.	employing teaching strategies suitable for one level and type of ability.

Learner-Centered Instruction
By: Paul Kim

Model	Attributes
Inquiry	<ul style="list-style-type: none"> • A learner-centered, active learning approach focusing on questioning, critical thinking, and problem solving • Follows the principle that involving learners will help them better understand the lessons
Resource-based learning	<ul style="list-style-type: none"> • Learners actively engage in multiple resources (print and non-print) • Learners responsible for selecting resources (e.g. Internet, books, human) that appeal to their personal learning preferences, interests and abilities • Learners become active learners as they use a wide range of materials to investigate subject material prescribed within their classroom curriculum
Cognitive Apprenticeship	<ul style="list-style-type: none"> • Learners work in teams on projects or problems with close scaffolding of the teacher • Guided participation helps the learner achieve tasks that independently would be too hard or complicated. • The task or goal is to form a process of thinking—or something that is intangible into something tangible • Teachers usually model or scaffold the skills or tasks in the beginning. Once learners begin to understand, the modeling and scaffolding is reduced. This allows learners to accomplish the task on their own and only ask for help when needed
Problem-based learning	<ul style="list-style-type: none"> • Focuses on the process of problem solving, critical thinking in situated contexts, and acquiring knowledge. It is inquiry-based when learners are active in creating the problem • Emphasis is placed on using communication, cooperation, and resources to formulate ideas and develop reasoning skills • Knowledge is constructed within each individual or community based on the learner's or community's prior knowledge, values, beliefs, and perspectives. • Learning occurs through social interactions whereby an outside source can help individuals extend their learning • Activities are organized around achieving a shared goal (project)
Project-Based Learning	<ul style="list-style-type: none"> • Focuses on developing a product or creation • Engages learners by starting with concrete and solving hands-on, real-world problems • Learners are usually provided with specifications for a desired end product (e.g a specific project, such as building a rocket or designing a web site) • The learning process is more oriented to following correct procedures. • Teachers are more likely provide expert guidance, feedback and suggestions (e.g. modeling, scaffolding) to help learners achieve the final product. This is provided according to learner needs and within the context of the project • Activities are organized around achieving a shared goal (project)
Collaborative Learning	<ul style="list-style-type: none"> • Learners placed in groups or pairs for the purpose of achieving a common academic goal • Learners are responsible for one another's learning as well as their own. Thus, the success of one learner helps other learners to be successful • Does not require face-to-face interaction as collaborative learning can take place across the Internet
Cooperative Learning	<ul style="list-style-type: none"> • It is a specific kind of collaborative learning, where learners work together in <i>small</i> groups on a structured activity. They are individually accountable for their work and are responsible for helping teammates learn • Cooperative groups work face-to-face and learn to work as a team
Constructivism	<ul style="list-style-type: none"> • Founded on the premise that reflecting on personal experiences allows learners to construct their own understanding of the world • Teachers focus on making connections between facts and fostering new understanding in learners • Teachers rely heavily on open-ended questions and promoting extensive dialogue among learners • Learners encouraged to analyze, interpret, and predict information

SUPPORTING STUDENT INQUIRY

As outlined in the programme model, the curriculum framework recognizes and values students' efforts to construct meaning when exploring the world around them. To support this, the MYP requires teachers to provide learning experiences that draw on students' prior knowledge and provide the time and opportunity for reflection and consolidation. This **constructivist** approach respects students' ongoing development of ideas and their understanding of the wider world. It implies a pedagogy that includes student inquiry into significant content in real-world contexts. This pedagogy leads to the most substantial and enduring learning.

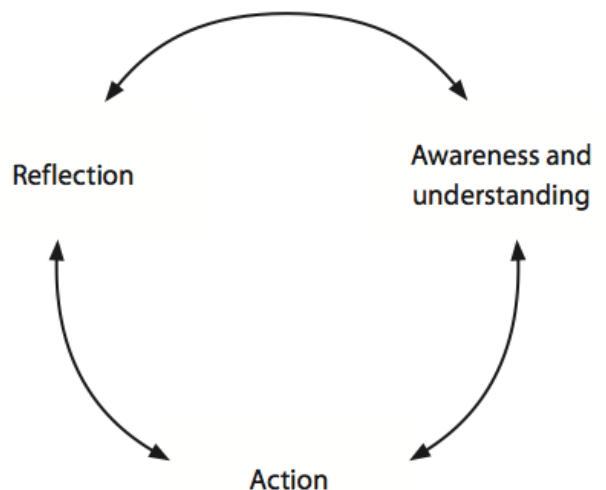
The construction of meaning and the development of conceptual understanding are supported in the MYP by the acquisition of knowledge and the development of skills and attitudes that have a context. This is the way in which students learn best—they should be invited to investigate significant issues by formulating their own questions, designing their own inquiries, assessing the various means available to support their inquiries, and proceeding with research, experimentation, observation and analysis that will help them find their own responses to the issues. The starting point is students' current understanding, and the goal is the active construction of meaning by building connections between that understanding and new information and experience, derived from the inquiry into new content. It is further recognized that not all learning in the MYP will take place in an inquiry setting.

FORMS OF INQUIRY

Inquiry can take many forms, yet the most successful form is when students' questions and inquiries are genuine and take them from existing knowledge to new levels of understanding. An explicit expectation of the MYP is that successful inquiry will lead to meaningful reflection and to responsible action initiated by the students as a result of the learning process. This action may extend the students' learning, or it may have a wider social impact. Both inquiry and action can look very different from age 11 to 16.

When engaging with an MYP unit of work students can use the inquiry cycle to:

- make connections between previous learning and current learning
- experiment and play with various possibilities
- make predictions and take action to see what happens
- collect data and report findings
- clarify existing ideas and reappraise perceptions of events
- deepen their understanding through the application of a concept
- make and test theories
- research and seek information
- take and defend a position
- solve problems in a variety of ways.



LINEAR OR NOT?

In this activity, you will learn how to tell if an equation represents a line by simply looking at it. You will need a graphing calculator and will work with one other person.

I. To begin, in your notebook make a table with two columns, one labeled “LINEAR” and the other “NON-LINEAR”. You will need about 15 rows.

LINEAR	NON-LINEAR

On your graphing calculator, draw the following graphs one at a time. Every time you find one that is a line, write its equation in the “Linear” column. Equations of non-linear graphs go in the other column. After the first ten, try to guess if the equation will produce a linear graph before graphing it. (HINT: You may need to play with the WINDOW in order to better see the graph. Some graphs appear linear when zoomed out but are actually non-linear when you see them with a more appropriate scale.)

EQUATIONS:

$$y = x^2 - 5$$

$$y = 3x + 9$$

$$y = \sqrt{2x - 8}$$

$$y = \frac{4}{x}$$

$$y = \frac{1}{2}x - 3$$

$$y = 9 - x$$

$$y = 2x^3 - x + 4$$

$$y = (x + 2)(x - 4)$$

$$y = -6x$$

$$y = 2^x + 5$$

$$y = \sin x$$

$$y = 1.2x + 24$$

$$y = \frac{x + 3}{x - 5}$$

$$y = \frac{2x - 6}{3}$$

$$y = |x - 4| + 3$$

$$y = \frac{x}{4} - 2$$

$$y = \frac{-2}{x^2}$$

$$y = x$$

$$y = 3(2x - 12)$$

$$y = \frac{1}{\sqrt{x + 2}}$$

Looking at your results, how can you tell if an equation represents a line or not? Write your rule in your notebook and show some examples of what you mean.

II. Not all equations are given in the form “ $y = \dots$ ” and, therefore, using a graphing calculator might not be appropriate. For each of the following equations, fill in the table and then sketch a graph based on the points. The goal is to figure out which equations represent lines. Again, write the equations in the remaining space in the table you’ve been using.

$$x^2 + y^2 = 100$$

Sketch

x	y
0	
0	
	0
	0
6	
-6	
8	
-8	

$$2x + 3y = 12$$

x	y
0	
	0
3	
-3	
-6	

$$x - 4y + 8 = 0$$

x	y
0	
	0
4	
-4	
8	

In the space between the given equation and your graph, rewrite the equation so that the “ y ” is isolated (by itself on one side).

Based on your graph and the rewritten equations, do these equations follow the rule you established previously? If not, how should you change your rule to fit this new information?

III. Using the graphing calculator, graph the equations of the linear relationships from the original table one at a time and fill in the following. (HINT: Use the version where “y” is isolated.)

LINEAR RELATIONSHIP	SLOPE (m)	Y-INTERCEPT (b)

What do you notice about the numbers in the equation? How is this information helpful? Summarize what you found using mathematical symbols.

IV. Pick any three of the equations from the last table and write them in the first column in the table below:

EQUATION	Point A	Point B	Slope	y-intercept

For each equation, find one point on the line. Write it in the second column.
(HINT: Choose a value for “x” and find the corresponding “y” value.)

Find a second point in the same way and write it in the column marked “Point B”.

Using the two points and the formula for slope from last class, find the slope of each line.
How do they compare to what you wrote in the last table?

Find the y-intercept of each line (if you haven’t already) by plugging in the appropriate value for “x”. How do these values compare to what you wrote previously?

You have just figured out that, once you know that an equation represents a line, there are TWO ways of finding the line’s slope and its y-intercept. What are they?

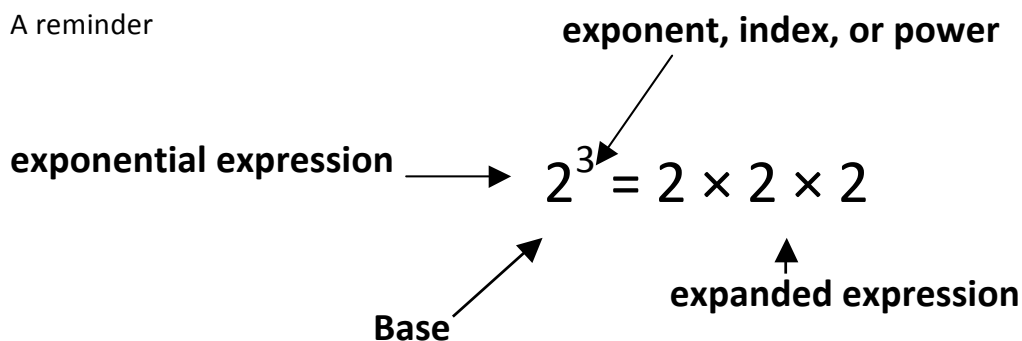
METHOD 1:

METHOD 2:

QUESTION: What does it mean when we say that there is a “linear relationship” between variables? How is that different than one that is “nonlinear”? What do the slope and y-intercept represent in linear relationships?

Exponential evidence

A reminder



A: Multiplying exponential expressions with the same base

Directions: In this first activity, you are going to predict what happens when you multiply **exponential expressions** together which have the same base. Then, you are going to look over some **exponential evidence** that will help you determine whether or not your prediction was accurate.

1. Making a Prediction

Each of the answers to the problems below can be written as **exponential expressions**. Predict each answer then explain, in words, why you made that prediction.

$$5^3 \times 5^4 =$$

$$3^5 \times 3^2 =$$

$$a^m \times a^n =$$

2. Examining the evidence

Examine each of the following pieces of evidence to help you decide whether the predictions you made above were correct.

Evidence Sample #1: To simplify the following problem,

- write each exponential expression as an ordinary number,
- multiplying the numbers together and then,
- re-write the answer as an exponential expression

$$2^4 \times 2^2 =$$

Does the evidence from this problem support the predictions you made?

Evidence Sample #2: To simplify the following problem,

- write each of the exponential expressions in expanded form,
- write the answer to the problem in expanded form and then,
- simplify your answer by re-writing the expanded form as a single exponential expression

$$4^3 \times 4^5 =$$

Does the evidence from this problem support the predictions you made?

Evidence Sample #3: To simplify the following problem,

- use a scientific calculator, or GDC, to calculate the answer and then,
- re-write the answer as an exponential expression

$$5^2 \times 5^4 =$$

Does the evidence from this third problem support the predictions you made?

3. Drawing conclusions

Based on the evidence you have collected from the three samples above, what conclusion can you come to about what happens when exponential expressions with the same base are multiplied together?

Table 1: General comparison of inquiry and direct instruction

Inquiry-Based	Direct Instruction
Understanding and use of knowledge, ideas and inquiry process	Acquisition of information
Guiding students in active and extended inquiry	Presenting knowledge through lecture, text, and demonstration
Providing opportunities for discussion and debate among students	Asking for recitation of acquired knowledge

Source: Campbell, 2006

Table 2: A general description of the types of inquiry

Type	Description	Example Activity ¹
Structured inquiry ²	Teacher provides questions for students to investigate in a prescribed procedure Allows teachers to show the basics of inquiry and techniques of using different equipment and procedures that can be applied in later more complicated investigations	<i>Colored Clouds</i> : students observe particles that make up warm water move around faster than particles that make up cold water. This is demonstrated by observing clouds made of food coloring mixed with different temperatures of water
Guided inquiry	Teacher provides questions for students to investigate; students devise own problem-solving procedures	<i>Marbles in Motion</i> : students learn how to play different games of marbles while learning the scientific concepts of force, motion, mass, acceleration, friction, and inertia
Open inquiry ³	Students formulate and investigate questions, as well as devise the problem-solving procedure	<i>Crazy Putty Ratio</i> : students mix various ratios of liquid starch and glue to make Crazy Putty using knowledge of measurements and ratios;

¹ Activities appropriate for elementary school students.

² Similar to cookbook activities, but with less direction about what students are to observe and collect.

³ Open (student-initiated) inquiry is most analogous to doing science.

		they chart their ratios, make observations, and write summary of activity
Learning cycle	Students engage in an activity that introduces a new concept; teacher then introduces formal name for the concept; students take ownership of concept by applying it in a different context	<i>Marbles in Motion II:</i> students given additional objects to observe and measure the motion of and be asked to analyze the variables that influence the motion

Source: Colburn, 2000

Table 3: Structured, guided, and open instruction

<div> <div>Structured</div> <div>Guided</div> <div>Open</div> </div> <div> </div>		
<ul style="list-style-type: none"> Teachers provide questions for students to investigate Students investigate in a prescribed procedure 	<ul style="list-style-type: none"> Teachers provide questions for students to investigate Students devise own problem-solving procedures 	<ul style="list-style-type: none"> Students formulate and investigate questions Students devise own problem-solving procedure

Source: Colburn, 2000

Table 4: Stages of the learning process in inquiry

Stage	Aspects
Engagement (Ask)	<ul style="list-style-type: none"> • Object, event, or question used to grab students' attention • Meaningful questions about real world experiences • Engages students in a real-world issue
Exploration (Investigate)	<ul style="list-style-type: none"> • Students investigate, organize, analyze, interpret, and evaluate data • Interactive activities • Information gathering becomes a self-motivated process
Explanation (Create)	<ul style="list-style-type: none"> • Students clarify understanding of new discoveries, make generalizations and conclusions • Students begin to make connections as understanding coalesces • Students begin to synthesize meaning
Elaboration (Discuss)	<ul style="list-style-type: none"> • Students build upon new concepts and skills • Knowledge sharing or comparing discoveries with other students • Students begin to realize greater relevance to the context of their own society
Evaluation (Reflect)	<ul style="list-style-type: none"> • Self assessment allowing students to evaluate their development and lesson effectiveness • Students take self inventories and make observations about the overall experience

Source: Bybee et al., 1989; University of Illinois, Urbana-Champaign, Inquiry Page Project. (n.d.)

Table 5: Process skills and thinking levels involved in inquiry

Process Skill	Bloom's Taxonomy (Thinking Levels) ⁵
Observation	Knowledge
Predicting	Comprehension
Hypothesizing	Application
Identifying and controlling variables	Application
Collecting data	Comprehension
Interpreting or analyzing data	Application
Inferring	Application
Making tables and graphs	Application
Communicating	Analysis, synthesis, evaluation

Source: Coffman & Riggs, 2005

Table 6: Common inquiry skills and dispositions

Skills	Dispositions
<ul style="list-style-type: none"> • Making observations • Asking complex questions • Forming problems • Forming explanations • Conducting investigations or explorations using the web) (e.g. reading, writing, • Thinking critically, differentiating between direct observations and inferences, challenging assumptions, causal and predictive reasoning • Sharing ideas and control • Drawing reasonable conclusions • Asking better questions. 	<ul style="list-style-type: none"> • Openness to mystery, complexity, different points of view • Withholding premature judgment • Listening • Being cooperative with others • Willingness to take risks • Self-confidence.

Source: Lampert, 2006

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Bybee, R. W., Buchwald, C. E., Crissman, S., Heil, D. R., Kuerbis, P. J., & Matsumoto, C. et al. (1989). *Science and technology education for the elementary years: Frameworks for curriculum and instruction*. Washington, DC: The National Center for Improving Science Education.

Campbell, D. T. (2006). A qualitative investigation of the factors influencing the implementation of reform efforts in science education. *Improving Schools*, 9(1), 61-68.

Colburn, A. (2000). An inquiry primer. *Science Scope*, 23 (6), 42-44.

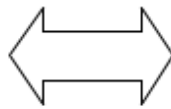
Coffman, M., & Riggs, L. (2005). The virtual v map: A template for internet inquiry. *Journal of College and Science Teaching*, 36(1), 32-39.

Lampert, N. (2006). Enhancing critical thinking with aesthetic, critical, and creative inquiry. *Art Education*, 59 (5), 46-50.

Area of interaction focus

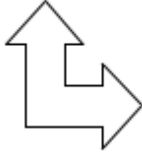
Which area of interaction will be our focus?
Why have we chosen this?

Environments. The classroom environment
nurtures inspired learning.

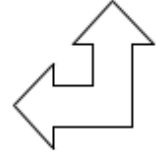
**Significant concept(s)**

What are the big ideas? What do we want our
students to retain for years into the future?

Our surroundings are part of who we are.

**MYP unit question**

What inspires learning?



Design an MYP Classroom:

What inspires learning? With people at your table group, your focus is on how to design a classroom environment that best inspires learning. Consider the following categories to represent in the classroom:

<i>MYP Principles</i>	<i>Physical Arrangement</i>	<i>Content</i>
Consider these elements: <ul style="list-style-type: none">• The learner profile• The IB mission statement• Intercultural Awareness	Consider these elements: <ul style="list-style-type: none">• A room that fosters inquiry• A room that appeals to a variety of learning styles	Consider these elements: <ul style="list-style-type: none">• All teachers are language teachers• Supports holistic learning• Taxonomy of thinking• Building life-long learners

Area of interaction focus

Which area of interaction will be our focus?
Why have we chosen this?

Human Ingenuity. MYP teachers will create
engaging inquiry-based units of study.

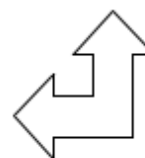
**Significant concept(s)**

What are the big ideas? What do we want our
students to retain for years into the future?

Good planning leads to good results.

**MYP unit question**

How does my classroom deliver the MYP?



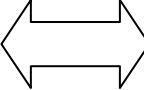


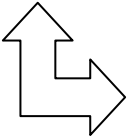
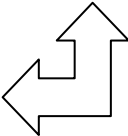
MYP Unit Planner - **POINTERS**

Unit Title	
Teacher(s)	
Subject/grade level	
Time frame/duration	

Stage 1: Integrate significant concept, area of interaction and unit question.

Begin by brainstorming all of the underlying concepts topics or skills, not concepts to be taught in the unit.

Area of interaction focus Which area of interaction will be our focus? Why have we chosen this?		Significant concept(s) try to focus on just one What are the big ideas? What do we want our students to retain for years into the future?
Health and Social Education Human Ingenuity Environments Community and Service *note: Every MYP unit of work will have an Approaches to Learning (ATL) component and will be addressed elsewhere in the planner. Please choose only one AOI		<ul style="list-style-type: none">•Anchors learning in real life•Perhaps it can become an interdisciplinary link if the teacher chooses to do so• Try to make it broad – not just focussing on specific individual math skills

	<div><u>MYP Unit Question*</u> WORM ON A HOOK!</div> <ul style="list-style-type: none">•Open-ended (no one right answer)•Relevant and engaging•Global (if you can...)•Not value laden (does not use words like best, worst)•Not a straight yes/no question•Significant and engaging (<i>"grabs the attention of the students"</i>)•Kid friendly – can start with an adult version that links to your significant concept then modify it to work with your audience...	
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Sample Unit Questions

Significant Concept: Finding similarities

AOI: Human Ingenuity

How do you know when you can believe what you see?

Significant Concept: Complex begins with simplicity AOI: Human Ingenuity

Why do we break things down?

Significant Concept: The importance of precision for safety AOI: Health and Social

How do you know you are right?

Significant Concept: Getting from A to B

AOI: Human Ingenuity

How do I measure the immeasurable?

Significant Concept: Process has purpose

AOI: Human Ingenuity

How can you learn from your mistakes?

Significant Concept: Winning may be predictable but the cost may not.

AOI: Health and Social

What is the cost of playing games?

INTERDISCIPLINARY UNITS

Theme: beauty

Significant Concept: Definitions of beauty around the world

AOI: H&S

What is beauty to me?

Theme: water

Significant Concept: Be aware of your own body as a precious genetic package

AOI: H&S

How can I measure my health?

Theme: renewable energy

Significant Concept: Everything uses energy

AOI: Environments

How long can we keep going?

Theme: Nutrition

Significant Concept: Good life has balance

AOI: H&S

How much is enough?

Theme: Technology

Significant Concept: The impact of technology on teens

AOI: H&S

How does technology affect our lives?

Year 3 Interdisciplinary Unit

Unit Question: How have patterns become a part of life?

This unit will cover the many uses of patterns in Mathematics, Science, US History and Language.

Objectives:

Language A: Students will discover that patterns of speech and body language can tell things like what part of the country or world you come from as well as whether you are being truthful or not. They will also learn that there are patterns we must follow when writing essays and citing sources.

Science: Scientists use patterns in their discoveries and experiments to save species and our environment, predict disease outbreaks and weather and much more.

Mathematics: Patterns lead to equations that can be used to do everything from predicting population growth and weather to determining insurance rates, how many portable classrooms will be needed next year and how many teachers need to be hired. Patterns found in nature give us the basis for our figures used in construction and architecture. Ideas about beauty come from how well things fit the patterns of symmetry and the golden ratio. It was the discovery of patterns that gave us the Pythagorean Theorem, musical notes, and even the number Pi.

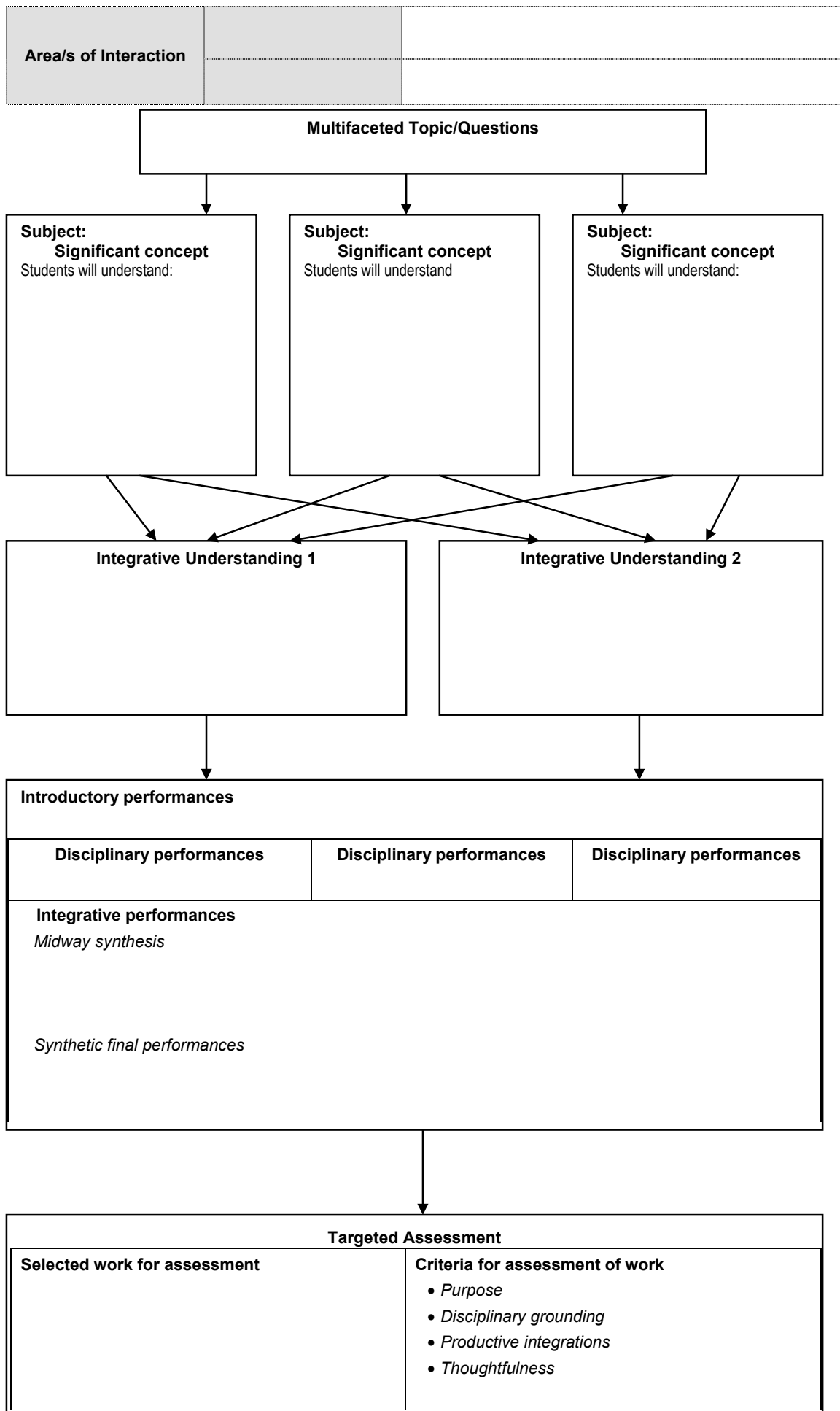
Humanities: They will compare and contrast and look for similarities among things that happened during different time periods in history and if we are repeating those patterns today.

Art: Patterns are used in different artistic styles and periods in art history.

Music: Patterns are the basis for musical compositions.

Plan:

Each teacher will work within their subjects with different areas of interaction, subject specific guiding questions, and assessment.



Multifaceted topics are...

- relevant
- feasible
- clearly framed

Disciplinary Understandings are...

- robust
- selective

Integrative Understandings are...

- tied to the purpose of the unit
- clearly described

Performances of Understanding...

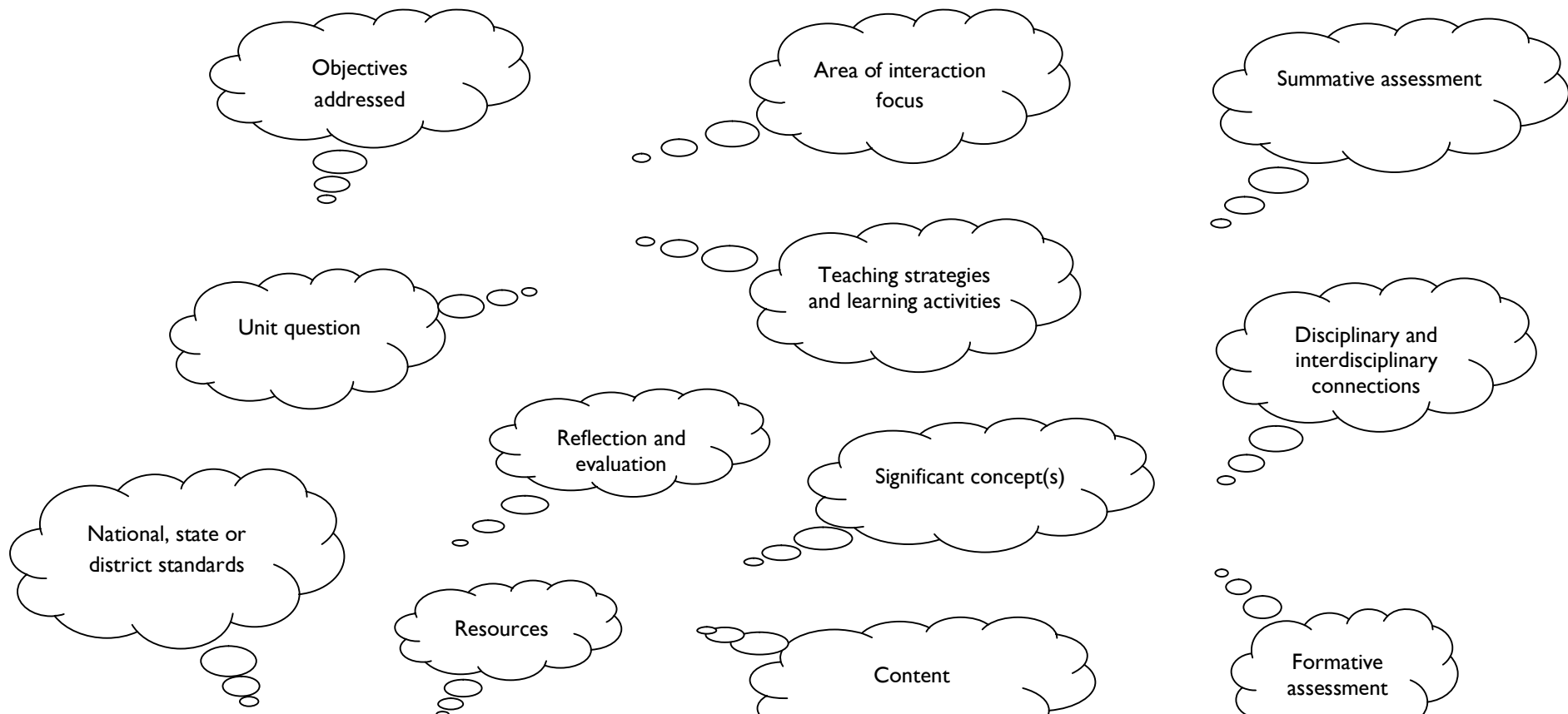
- foster clarity of purpose, disciplinary grounding, productive integrations and thoughtfulness
- progressively advance interdisciplinary understanding of the topic
- take advantage of rich experiences and resources

Targeted Assessment...

- draws on a representative selection of student work
- is formative and summative
- pays attention to clarity of purpose, disciplinary grounding, productive integrations and thoughtfulness

	Checklist to evaluate unit planners		
		yes	not really
	Purpose of the unit		
	Was the MYP unit question clearly stated?		
	Were appropriate connections made in the MYP unit question between the main concepts and an AoI?		
	Were the opportunities for inquiry appropriate for the development level and interests of the students?		
	Was there a direct link between the concepts to be understood and the learning activities?		
	Significant concepts in context		
	Did the unit of work provide opportunities for exploring significant knowledge?		
	Did the unit of work provide opportunities for understanding the main concepts and related concepts?		
	Did the unit of work provide opportunities for acquiring and applying relevant skills?		
	Did the unit of work provide opportunities for developing responsible attitudes and taking action?		
	Did the unit of work provide opportunities for engaging in ongoing and meaningful reflection?		
	Were the lines of inquiry and learning experiences drawn from a variety of cultural perspectives?		
	Assessment		
	Did the summative assessment link to the MYP unit question?		
	Did the assessment strategies and tools allow for differences in the way students learn?		
	Were the criteria for success in this unit of work clearly identified for both students and the teachers?		
	Learning experiences		
	Did the learning experiences stem from a variety of appropriate teaching strategies and learning needs?		
	Did the availability and range of resources support the inquiry for all students?		
	Were students actively engaged, provoked and challenged?		
	Was there space for student inquiry?		

What should go into an MYP unit plan?



Assessment

Culminating task

Teachers are required to develop a culminating assessment task for each MYP unit. A culminating task will provide students with further opportunities to demonstrate their learning in an authentic situation.

A culminating task will allow students an opportunity to respond to the MYP unit question. It is critically important that teachers consider how students will be able to demonstrate their understanding of the significant concept or big idea.

Teachers must think as moderators, asking themselves the following questions.

“What will constitute acceptable evidence of understanding?”

“How will students show that they have engaged with the unit question and significant concept?”

“How will students show what they have understood about the significant concept or big idea?”

When teachers are in stage 1 of the planner, assessment is the process of determining for each student a level of achievement in the assessment criteria. Teachers will bring together information they have on student learning to build a picture of where each student sits on the level of achievement scales. Teachers are not confined to using just one assessment task in each MYP unit of work—they should use data taken from a range of assessments.

MYP Assessment
Rubric Design

MYP Unit Question:
Significant concept:
Summative Task: (Briefly describe)

Area of Interaction:

Criterion _____: _____

Achievement Level	Level Descriptor Year 5	Level Descriptor Year 3	Level Descriptor Year 1
0			
1-2			
3-4			
5-6			

How to:

- Survey the criteria and limit to those that best measure the task
- Within each selected criterion, choose one or two MYP objectives that either aligns with state / provincial standards or national curriculums.
- Highlight the objective(s) in the descriptors that are reflected in the chosen criterion.
- Modifying the rubrics for age-appropriateness using the interim objectives.
- Select the appropriate interim objective (either year 3 or 1) and write a level descriptor for the highest band
- Keeping the bolded descriptors within the band, modify the rubrics all the way up to zero while keeping the integrity of the levels intact.

TEN ASSESSMENT ESSENTIALS

1. Objectives: Describe what students should be able to do
 - a. Year 5 are found in subject guide
 - b. Years 1-4 use the interim objectives in subject guide
 - c. Must be age and developmentally appropriate
2. Assessment Criteria: Describe how we will judge to what degree the student has achieved the objective.
 - a. Objective bullets (strands) = assessment criteria descriptors
 - b. Year 5 are found in subject guide
 - c. Years 1-4 use the interim objectives to develop
3. Assessment Task: This is designed by teachers to allow students to demonstrate that they can meet the objectives.
 - a. Must allow students to achieve the highest levels of achievement on the assessment criteria.
 - b. As you design tasks, keep the year 5 prescribed minimum tasks in mind.
4. Assessment Rubrics: clearly identifies the teacher's expectations.
 - a. Year 5 are found in the subject guide.
 - b. Year 1-4 must be developed
 - i. Adjust descriptors so they are age and developmentally appropriate.
 - ii. You may use kid-friendly language.
 - iii. Give task-specific clarifications
 - c. Must not add or take away from the criteria.
5. Exemplars: Show students examples of work that would be awarded the various levels of achievement on the rubric.
6. Standardization: for subject-alike teachers
 - a. Must develop common summative assessment tasks.
 - b. Must agree on how the assessment criteria are applied.
7. Giving grades on an assessment task
 - a. Determine the level of achievement for the criteria (usually 1 or 2 criteria at a time)
 - b. Convert to a district grade if this is part of your assessment plan. (NOTE you may convert an MYP level of achievement to a district grade, but you may not convert a district grade to an MYP level of achievement.
8. Giving Final Grades (required in year 5)
 - a. Make sure to complete the required number of assessments for each criterion.
 - b. Determine a final level of achievement for each assessment criterion.
 - c. Add final levels together and use the grade bands to determine a final grade 1-7.
9. Reporting MYP grades/levels of achievement.
 - a. Determine when and how often grades will be reported to parents and students.
 - b. Convert to a district grade (if this is part of your assessment plan)
 - c. Reporting should occur on a regular basis in a meaningful way.
10. Monitoring/Moderation
 - a. Decide which process your school will use.
 - b. Monitoring: must be done within two years of the evaluation visit
 - i. Monitoring for evaluation
 - ii. Monitoring before moderation
 - c. Moderation: Validates MYP grades
 - i. Record of Achievement (transcript)
 - ii. MYP certificate (if student meets all the requirements)

Assessment tasks

One of the first stages in planning a unit of work is to design **summative assessment tasks**, linked to the MYP unit question, which provide varied opportunities for students to demonstrate their knowledge, understanding, skills and attitudes. It is also important to include ongoing **formative assessment tasks** within a unit of work as these provide valuable insights into the extent of student learning as the unit of work progresses.

It is important to realize that the formats of both summative and formative assessment tasks need not be reduced to examinations, tests, quizzes and written questions set as homework. These formats are valid in certain cases but do not always take into account different learning styles and may not provide students with sufficient creative scope to demonstrate all they have learned. There are many different ways in which evidence of student learning can be found. For example, students could carry out assessment tasks that involve:

- making a presentation using visual aids (for example, flipcharts, electronic slides)
- solving a cross-number puzzle where the clues are provided in the form of calculations to be made and/or problems to be solved
- playing a game that requires a particular set of skills or knowledge and understanding of certain concepts
- making a three-dimensional model (for example, scale models of the earth, moon and sun)
- telling a story (for example, stories where numbers have been deliberately scaled up or down by multiples of ten to provide comic entertainment, thereby demonstrating the need for accuracy with regard to place value)
- keeping a personal journal that documents their development of mathematical understanding
- making a poster or wall chart
- writing a short song or poem that incorporates important mathematical principles (for example, a rap chant incorporating the principles of Pythagoras' theorem)
- creating a mnemonic as an aid to memory (for example, the rules for the sine, cosine and tangent properties of a right-angled triangle expressed in one word, SOHCAHTOA, or as a phrase or saying, "Some owls have")
- keeping a scrapbook containing extracts from the media that illustrate a particular property
- maintaining a folder of their own work
- developing an information booklet/leaflet that describes a concept and/or mathematical process in detail
- writing a summary sheet as a revision guide for a particular mathematical topic
- creating pictures, diagrams or cartoons to illustrate a particular concept or process
- carrying out an investigation
- collecting data and storing it in appropriate formats (for example, tables, spreadsheets)
- creating a personal data booklet.

Answers

Item	Ranking	NASA's Reasoning
Box of matches	15	Virtually worthless -- there's no oxygen on the moon to sustain combustion
Food concentrate	4	Efficient means of supplying energy requirements
50 feet of nylon rope	6	Useful in scaling cliffs and tying injured together
Parachute silk	8	Protection from the sun's rays
Portable heating unit	13	Not needed unless on the dark side
Two .45 calibre pistols	11	Possible means of self-propulsion
One case of dehydrated milk	12	Bulkier duplication of food concentrate
Two 100 lb. tanks of oxygen	1	Most pressing survival need (weight is not a factor since gravity is one-sixth of the Earth's -- each tank would weigh only about 17 lbs. on the moon)
Stellar map	3	Primary means of navigation - star patterns appear essentially identical on the moon as on Earth
Self-inflating life raft	9	CO ₂ bottle in military raft may be used for propulsion
Magnetic compass	14	The magnetic field on the moon is not polarized, so it's worthless for navigation
20 litres of water	2	Needed for replacement of tremendous liquid loss on the light side
Signal flares	10	Use as distress signal when the mother ship is sighted
First aid kit, including injection needle	7	Needles connected to vials of vitamins, medicines, etc. will fit special aperture in NASA space suit
Solar-powered FM receiver-transmitter	5	For communication with mother ship (but FM requires line-of-sight transmission and can only be used over short ranges)

Scoring:

For each item, mark the number of points that your score differs from the NASA ranking, then add up all the points. Disregard plus or minus differences. The lower the total, the better your score.

0 - 25 excellent

26 - 32 good

33 - 45 average

46 - 55 fair

56 - 70 poor -- suggests use of Earth-bound logic

71 - 112 very poor – you're one of the casualties of the space program!

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